DOE/EH-0603

Honeywell Federal Manufacturing & Technologies (FM&T)/Kansas City:

Report from the DOE Voluntary Protection Program Onsite Reevaluation, August 2-6, 1999

U.S. DEPARTMENT OF ENERGY
Office of Environment, Safety and Health
Office of Worker Health and Safety
Office of Occupational Safety and Health Policy
Washington, D.C. 20585

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Foreword

The U.S. Department of Energy (DOE) recognizes that true excellence can be encouraged and guided, but not standardized. For this reason, on January 26, 1994, the Department initiated the DOE Voluntary Protection Program (DOE-VPP) to encourage and recognize excellence in occupational safety and health protection. This program closely parallels the Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP). DOE-VPP outlines areas where DOE contractors and subcontractors can surpass basic compliance with DOE orders and OSHA standards. The program encourages the "stretch for excellence" through systematic approaches that involve contractor and subcontractor employees of all levels in the safety program. DOE-VPP emphasizes creative solutions through cooperative efforts by managers, employees, and DOE.

The DOE-VPP consists of three programs, with names and functions similar to those in OSHA-VPP. These programs are STAR, MERIT, and DEMONSTRATION. The STAR program is the pinnacle of DOE-VPP. This program is aimed at organizations with truly outstanding safety and health programs. The MERIT program is a steppingstone for contractors and subcontractors that have very good safety and health programs but need additional time and DOE guidance to achieve the excellence denoted by STAR status. The DEMONSTRATION program is rarely used; it allows DOE to recognize achievements in unusual situations about which DOE needs to learn more before determining approval requirements for STAR status.

Requirements for DOE-VPP participation are based on comprehensive, integrated management systems where employees are actively involved in evaluating, preventing, and controlling potential hazards at the site. DOE-VPP is designed to apply to all contractors in the DOE complex and to encompass production facilities, research and development operations, environmental remediation activities, and various subcontractors and support organizations.

DOE contractors are not required to apply for participation in the DOE-VPP. In keeping with the OSHA-VPP philosophy, *participation is strictly voluntary*. Additionally, any participant may withdraw from the program at any time.

Honeywell (formerly Allied Signal) Federal Manufacturing & Technologies (FM&T)/ Kansas City first received Star level recognition in March 1996. DOE-VPP team members reevaluated the company in August 1999, to consider Honeywell FM&T/Kansas City for recertification under the DOE-VPP. Reevaluations are conducted triennially for companies that have obtained Star level status within the DOE-VPP.

This report summarizes the findings from the reevaluation of Honeywell FM&T activities at the Kansas City Plant (KCP) during the week of August 2-6, 1999. The efforts and accomplishments of Honeywell FM&T/Kansas City represent a milestone in the Department's efforts to encourage employee empowerment and to change the safety culture in DOE from compliance-driven *re*activity to continuous improvement–driven *pro*activity.

The purpose of this report is to provide the Assistant Secretary for Environment, Safety and Health with an assessment against the DOE-VPP criteria, together with other information necessary to make the final decision regarding the disposition of Honeywell FM&T's recertification of its Star designation. The observations and conclusions documented in this report formed the basis upon which the reevaluation team has recommended that the site be recertified at the Star level.

Contents

Abbreviations and Acronyms

ART—accident review team

BLS—Bureau of Labor Statistics

CA/MP—cause analysis and mistake proofing

CBT—computer-based training

CPR—cardiopulmonary resuscitation

DOE—U.S. Department of Energy

DOE-VPP—U.S. Department of Energy Voluntary Protection Program

EH—Office of Environment, Safety and Health

EH-1—Assistant Secretary for Environment, Safety and Health

EOC—Emergency Operations Center

ERO—Emergency Response Organization

ES&H—environment, safety, and health

ESAP—environmental self-assessment program

FM&T—Federal Manufacturing & Technologies

JHA—Job Hazard Analysis

ICS—Incident Command System

IMS—Incident Management System

KCP—Kansas City Plant

LWDI—lost workday incidence

MDA—methylene dianiline

MMIS—maintenance management information system

MOPS—Management Observing and Promoting Safety

MSDS—Material Safety Data Sheet

NPR—National Performance Review

OSHA—Occupational Safety and Health Administration [of the U.S. Department of Labor]

PHA—Preliminary Hazard Analysis

PPE—personal protective equipment

RII—recordable injury incidence

SIC—standard industrial classification

VPP—Voluntary Protection Program

VPPPA—Voluntary Protection Program Participants Association

Executive Summary

This report summarizes the Department of Energy (DOE) Voluntary Protection Program (VPP) reevaluation of Honeywell (formerly Allied Signal) Federal Manufacturing & Technologies (FM&T)/Kansas City during the week of August 1, 1999. The purpose of the reevaluation was to consider Honeywell FM&T for recertification under the DOE-VPP, focusing on program changes since the initial visit in March 1996 when Honeywell FM&T (formerly Allied Signal) received STAR level recognition. Reevaluations are conducted triennially for companies that have obtained STAR level status under the DOE-VPP.

The three-member reevaluation team reviewed program documentation, conducted interviews with associates and managers, made workplace observations, and analyzed the company's injury and illness experience. The team identified and documented improvements under all of the VPP elements. It is believed that Honeywell FM&T's success in establishing exceptional employee involvement and management commitment has effectively driven improvements throughout the program.

EXEMPLARY ACTIVITIES

The reevaluation team identified and observed several exemplary activities associated with each of the VPP tenets. These include:

Management Leadership—Managers actively seek employee involvement in all safety-related activities and programs. The "**3999 – Comments, Please!**" phone line provides associates (Honeywell FM&T's term for employees) direct access to top management. The "**Management Observing and Promoting Safety**" (MOPS) program places management in work areas on a routine basis to meet with associates to discuss safety issues. Management continues to support associates' involvement in safety-related conferences, benchmarking initiatives, and external assistance activities.

Employee Involvement—The safety responsibilities of associates are clearly established and defined. In addition, associates are well represented on and are involved as members of accident investigation, job hazard analysis, and a number of committees and routine inspection teams. The team approach is fully institutionalized at Honeywell FM&T. A key mechanism for employee involvement is through the "VPP Steering Committee," which is primarily staffed by associates and charged with conducting a comprehensive annual review of the safety program, identifying and making recommendations for improving program performance, and ensuring completion of recommendations and corrective actions.

Worksite Analysis/Hazard Prevention and Control—The emphasis on management commitment and employee involvement is evident in increased focus on the use of teams for most worksite analysis tasks. This has resulted in significant improvements across analysis, trending, engineering controls, and work planning activities. Further strengthening of program effectiveness is made possible through significant enhancements in information sharing to improve internal communication. The enhanced site Intranet system enables all associates to have access to ES&H information.

Safety and Health Training—Associates have complete access to their own training records. All work planning activities include a discussion of required training and knowledge. Employees receive a comprehensive set of safety training courses and the caliber, quantity, and quality of available training is judged to be very high.

Recommendation

The reevaluation team concluded that Honeywell FM&T/Kansas City continues to meet or surpass all DOE-VPP requirements and recommends re-certification of STAR level status.

I. Introduction

This report provides an update on the status of the occupational safety and health program at Honeywell (formerly Allied Signal) Federal Manufacturing & Technologies (FM&T)/ Kansas City. A team consisting of an industrial hygienist and a safety engineer from Department of Energy (DOE) headquarters, along with a safety specialist from the Occupational Safety and Health Administration (OSHA) performed an onsite review during the week of August 1, 1999. The review consisted of a comprehensive analysis of program documents, interviews with management and employees, and workplace tours and spot checks. Honeywell FM&T/Kansas City received STAR level recognition under the DOE-VPP in March 1996. STAR participants are reviewed every three years under the DOE-VPP.

The report presents the onsite review team's analysis and results from the reevaluation of Honeywell FM&T activities to consider the site for recertification under the DOE-VPP. It reflects extensive document review and analysis as well as the results of employee and management interviews and workplace observations. The recertification process focused on significant changes and improvements to the Honeywell FM&T safety and health program since its original certification in March 1996. The recertification process is also complemented by Honeywell FM&T's own internal assessments of their program.

The reader should rely on the original onsite review report, this report, and Honeywell FM&T's annual program reviews to obtain a complete portrait of the company's safety and health program.

II. Quantifiable Program Results

A. Honeywell FM&T/Kansas City Rates

The team reviewed the OSHA *Log and Summary of Occupational Injuries and Illnesses* (OSHA 200 log) for the current year (1999) and three preceding calendar years. The recordable injury incidence (RII) rate and the lost-workday incidence (LWDI) rate for injuries were calculated for Honeywell FM&T/Kansas City, using the following standard formulas:

$$\text{RII Rate} = \frac{\text{No. of RIs [Col(1) + Col(2) + Col(6)] x 200,000}}{\text{No. of employee-hours worked}}$$

$$\text{LWDI Rate} = \frac{\text{No. of LWD cases [Col(2)] x 200,000}}{\text{No. of employee-hours worked}}$$

The following table presents the calculated Honeywell FM&T/Kansas City injury rates and associated data for the preceding three calendar years and the three-year average. Rates are calculated using injury data only, and compared to the latest injury rates published by the Bureau of Labor Statistics (BLS) for SIC Code 367, "Electronic Components and Accessories."

Table 1 – Injury Rates at Honeywell FM&T/Kansas City

Calendar Year	LWD Injury Cases	RII Cases	Employee-Hours Worked	LWDI Rate	RII Rate
1996	9	22	6,522,774	0.28	0.67
1997	21	43	6,135,491	0.68	1.40
1998	12	33	5,391,086	0.47	1.09
3-Year Average Rates				0.46	1.59
BLS 1997 National Average for SIC Code 367: SIC Code 367-Electronic Components and Accessories				1.8	4.1

As the preceding table shows, Honeywell FM&T meets the requirement that the 3-year-average LWDI and RII be at or below the most recent average for its specific industry. The data entered on the OSHA 200 log supports the information submitted in the application and contained in the associated injury and illness documents, including first-aid logs and DOE accident/incident reports.

The person responsible for maintaining the log is knowledgeable in OSHA recordkeeping requirements. The accident review team (ART) determines recordability of an incident. The ART includes members from the safety, industrial hygiene, and medical care departments. The ART functions in accordance with a Honeywell FM&T work instruction, which requires members to communicate any change in the status of recordable injuries/illnesses to the division accident/incident investigation coordinator. A review of the records confirmed that recordability determinations are assigned conservatively and may, in fact, lead to a slight overstatement of Honeywell FM&T's recordable injuries.

Interviews with associates confirmed that the data on the log and the supporting documentation are accurate.

B. Subcontractor Rates

The rates presented in the following table were calculated for all combined subcontractor operations to serve as an indicator of Honeywell FM&T's management of its subcontractor safety and health programs. Since Honeywell FM&T's subcontractors perform varied construction and maintenance activities, their rates were compared with those for SIC Code 17, "Special Trade Contractors."

Table 2 – Injury Rates of Honeywell FM&T/Kansas City Subcontractors

Calendar Year	LWD Injury Cases	RII Cases	Employee-Hours Worked	LWDI Rate	RII Rate
1996	6	19	368,937	3.25	5.03
1997	2	8	248,397	1.61	4.83
1998	4	12	318,132	2.51	7.05
3-Year Average Rates				2.6	6.0
BLS 1997 National Average for SIC Code 17: SIC Code 17-Special Trade Contractors				4.7	9.9

The calculated three-year average rates for Honewell FM&T's subcontractors are below the average for SIC Code 17 for 1997 (the latest published information available). They are a positive indicator of Honeywell FM&T's effective management and flowdown of safety and health program requirements and expectations to the subcontractors.

III. Management Leadership

Honeywell (formerly Allied Signal) FM&T continues to demonstrate a high level of management leadership in maintaining and improving the site's occupational safety and health program. Since receiving DOE-VPP STAR certification three years ago, Honeywell FM&T/Kansas City has continued to hold managers accountable for and focus on safety.

A variety of training programs, safety campaigns, and other programs have been developed and implemented since STAR recognition in March 1996. Current programs have benefited from the three years of maturing experience and continual improvement. A safety theme, entitled "Passport to the Star," is an example of a recent program designed to ensure continued awareness and commitment to safety program effectiveness. Management and associates participate jointly in all safety and health activities ranging from inspections to planning.

Management supports a variety of growing and expanding safety training and committee activity. Several safety committees exist across both work shifts enabling all associates to get involved in safety-related activities. The Monthly **ES&H Executive Meeting** provides a forum for information and issues to be communicated to top managers and labor representatives. Top managers have become more hands on in the daily operation of safety programs. From interviews it was apparent that managers were acutely aware of all incidents and accidents regardless of where they occurred at the Kansas City Plant (KCP). The managers have readily accepted their responsibility for safety as evidenced in a pervasive "we can get it done" attitude.

The team's observation is that management is genuine in keeping the lines of communication open with all associates. The **"3999–Comments, Please!"** phone line, which provides an easy mechanism for associates to register and resolve concerns about safety, is one example of several mechanisms that demonstrate management's interest in worker input.

Honeywell FM&T management believes that safety and health programs need to be continually modified and improved to maintain worker interest and to strengthen program effectiveness. The "**Management Observing and Promoting Safety**" (MOPS) program is an example of a continually improving program.

The MOPS is an evolution of the Director Tours program initiated in 1992 to perform periodic physical inspections of work areas. Today MOPS is an interactive assessment program that addresses the behavioral aspects of working safely. The evolution from physical inspection to a behavior-based approach is indicative of Honeywell FM&T's maturing, evolving, and improving corporate safety culture.

Honeywell FM&T has continued to improve management accountability for safety and health. A review and comparison of current and past Performance Evaluation Plans for managers revealed multiple specific safety-related performance elements. Discussions with management and associates supported the notion that managers are held accountable for safety.

Honeywell FM&T management has continued to apply adequate resources to its safety programs. These include aggressive promotion of internal as well as external training and conference participation. Approximately eight associates were expected to attend the National Voluntary Protection Program Participants Association (VPPPA) conference in Washington, DC, in September 1999. Honeywell FM&T management continues to integrate safety staffing in its ongoing restructuring processes. New staff has been added across the environment, safety and health (ES&H) organization over the last three years. Recently, the Manager of ES&H operations added a Technical Project Specialist to coordinate the administration of special safety projects.

IV. Employee Involvement

Honeywell FM&T views employee involvement as a "vital interest" to their overall goal of becoming a leader in manufacturing and ES&H. Employee involvement has evolved as programs and company culture have matured. Employee interviews supported a sincere belief that management desired employee input and respected employee ideas. The DOE-VPP reevaluation team observed a strong interdependence between management and employees that appeared natural and routine.

Several specific improvements have been made to enhance employee involvement over the last three years. A network of associates who function as accident investigation coordinators and investigators has been established for each organizational division. Employees review and comment on the **Kansas City Plant (KCP) ES&H Manual.** ES&H staff updates this online manual with input from affected employees and safety committees and teams.

One example of Honeywell FM&T valuing employee input and ideas relates to the construction of a new cooling tower. An employee operator recommended that a staircase be added to make access to the top easier. This suggestion was accepted and the employee sketched out his ideas and worked closely with management to make the improvement.

Figure 1: Honeywell FM&T Employee Suggestion Implemented

Further evidence of employee involvement and contribution to safety program success involves several ES&H subject-specific teams operating under the **Honeywell FM&T Six Sigma** concept approach. These include:

- JHA Integration,
- Fire Alarm Team,
- Beryllium Team,
- Lacerations Team, and
- Ergonomics Team.

The **Six Sigma** approach is an integration tool that involves teams utilizing similar objectives including Operational Excellence, Visual Workplace, Lean Enterprise, Activity-Based Management, Breakthrough Management, and Total Productive Maintenance. These teams are well supported by management, a further demonstration of management leadership, and integrated into the business systems at the site.

The **VPP Steering Committee** represents another strong indicator of employee involvement at Honeywell FM&T. Management relies heavily on this group for ES&H leadership, planning, and problem solving. The committee, which predominantly consists of employees, continues to improve its operational effectiveness. The group has performed four VPP Annual Evaluations. The recent mid-year update report was both comprehensive and well written. Interviews with employees and managers revealed that everyone respected the work and diligence of this committee.

Recommendations from the committee's annual reviews are established as objectives and incorporated into the plant performance expectations/objectives. They are tracked to completion through the site's corrective action-tracking program.

Interviews with managers and employees further revealed that safety and performance are top priority at Honeywell FM&T. A mutual respect between employees and management was quite

evident during the interviews. Those interviewed never identified their counterpart as a manager or employee but rather always referred to the individual by first name. It was clear from interviews that the safety culture at Honeywell FM&T has evolved and matured to a point where safety is an integral element of doing business.

V. Worksite Analysis

The reevaluation team found comprehensive and well thought out analysis programs in place. Improvements since the initial visit were visible in all program areas. Increased worker involvement through the use of teams during analysis activities has increased and promoted employee involvement and ownership of the program. Information is now more effectively accessed, used, and communicated through the use of an expanded Intranet system available to all associates.

A. Pre-Use, Pre-Startup Analysis

Honeywell FM&T's safety and health department continues to play a major role in the analysis portion of any equipment before purchase. Preliminary hazard analyses (PHA) are conducted before purchase of any new equipment. After a preliminary hazards review is conducted, an actual field verification review is conducted to determine and mitigate the potential hazards associated with the newly purchased equipment. To ensure continued involvement and effectiveness of the ES&H Division's role in the pre-use analyses, applicable procedures related to pre-use analyses are being modified. These include clarifying the restart-up procedures for the processes that have been shut down for safety reasons and/or that have category 1 items that are serious in nature. Also, a team approach is currently being used in the analysis of hazards for situations requiring major modifications.

The Honeywell FM&T safety and health department also conducts reviews of project drawings and specifications prior to any construction or remodeling. For example, the reevaluation team verified that a cooling tower, which was totally reconstructed recently, underwent a thorough specification drawing and safety review in the design phase. An employee representative stated that during the construction of this tower, a construction safety engineer literally lived on the project premises, monitoring safety aspects during its entire phase of the construction. The team also verified through the walkthrough, that appropriate safety features such as guardrails for stairs and yellow cautionary colors were built into the design. Upon completion of a construction or remodeling project, a Beneficial Occupancy Inspection is also conducted. This inspection is performed by ES&H disciplines prior to releasing the facility to its new occupant. The Honeywell FM&T ES&H organization continues to review the hazards associated with new chemicals prior to purchasing them for use at the plant, and substitutes them with alternative chemicals with lesser hazards, as necessary.

B. Comprehensive Surveys

The reevaluation team found Honeywell FM&T to conduct comprehensive surveys for safety and health hazards. These surveys are conducted by both the industrial hygiene and safety departments. Honeywell FM&T continues to maintain an industrial hygiene department highly capable of performing direct and indirect chemical monitoring. The reevaluation team also noted that Honeywell FM&T continues to conduct comprehensive safety surveys, which are performed by the safety department on a monthly basis to cover the entire site annually. A team of ES&H professionals including a safety engineer, industrial hygienist, fire protection specialist, and environmental protection specialist conducts these annual ES&H inspections. The inspections focus on a physical walkthrough of all departments and areas to identify hazards and validate effectiveness of safety and health programs. Hazards noted during these surveys are entered into a tracking system. A formal report is issued to the respective departments that are responsible for responding with corrective actions. Additionally, the safety department reviews any process utilizing hazardous chemicals to assess associates' potential exposure. The reevaluation team found the

Honeywell FM&T industrial hygiene department to also be involved in:

- *Noise evaluations* - which may be initiated if monitoring through the PHA process warrants area mapping and personnel dosimetry.
- *Asbestos characterization survey* - which is modeled after the "Asbestos in Schools Program." This survey includes comprehensive cataloging/documentation of asbestos-containing building material.
- *Lead surveys* - air monitoring and surface wipe samples are performed periodically in the firing range to determine concentration of lead in the air and the extent of surface contamination.

C. Routine Hazard Assessments (Self-Inspections)

Honeywell FM&T continues to perform self-inspections using environmental self-assessment program (ESAP) modules. The associates and the team managers conduct these inspections every other month. The departments can select modules from a total of 42, based on the nature of hazards in their departments. For example, if a particular location has band saws, that department would then choose a module on band saws. Other examples of modules include mechanical power presses, exit signs, and a portable ladder safety module. The ESAP modules are now available to all the departments on the site's Intranet, and the inspection results are entered into the database by each department's assignee. Reports on how many divisions have conducted inspections, and how many non-compliance items were found in each department can be accessed easily and obtained through the utilization of the database features.

Additionally, Honeywell FM&T's Management Observing and Promoting Safety (MOPS) program allows division directors and managers to perform tours of their facilities. The tours focus on reinforcing/rewarding observed safe behavior and correction of unsafe acts, and involve general safety and housekeeping inspections.

Honeywell FM&T conducts other self-inspection activities, including construction, fire protection, and crane inspections. For construction, the construction department's safety engineers perform inspections daily at the construction sites.

D. Routine Hazard Analyses

Honeywell FM&T has made significant improvement in its Job Hazard Analyses (JHA) program since the initial DOE-VPP onsite review three years ago. The JHA is now totally automated and computerized to assist line management in accessing job hazard analyses at their workstations. This web-based database has many features including search capabilities. For example, if a group is interested in a JHA previously performed for a particular job, the database can be readily searched to view the previous analysis. The JHAs under this new approach not only provide a breakdown of a job and its associated hazards and safety controls, but also provide a summary of hazards, protective equipment, procedures, and a list of training courses an associate can/should take to perform the job safely. The reevaluation team found the current JHAs are thorough and complete. Creation of JHAs under this new approach requires formal approvals by the JHA owner as well as the JHA Administrator who maintains the database. The JHA program continues to require both associate and team manager input during its development. Random interviews with associates and team managers confirmed that they were actively modifying and expanding the existing JHAs.

E. Employee Reports of Hazards

The reevaluation team verified that Honeywell FM&T employees continue to report safety and health concerns without any fear of reprisal. As was found during the initial DOE-VPP evaluation three years ago, employees can report a concern directly to their supervisor, union

leadership, the ES&H division, or an individual council member.

During the reevaluation visit, a union leader quoted that "employees are not shy of bringing any issues to their management." The reevaluation team also found that employees have the option to remain anonymous, if they choose to do so, and can use one of several telephone hotlines to report concerns. The employees at Honeywell FM&T have many avenues for reporting hazards, including:

1. Contacting any ES&H department member, ES&H representative, or line manager.

2. Reporting a safety or health concern to the ES&H concern line (x3181).

3. Reporting a safety or health concern to the "3999 Comments, Please!" telephone number. All calls, including anonymous ones, are responded to and reports are generated.

4. Following administrative procedure 645, which establishes the Honeywell FM&T procedures for addressing imminent danger noncompliance issues and restart procedures.

5. Using Emergency Response (x3600) or the SPIL hotline (x7745, or S-P-I-L). These numbers are answered 24 hours a day. Emergency response actions are taken immediately.

6. Filling out a safety and health concern form and dropping it into any of several special drop boxes across the site. The employee has the option of remaining anonymous.

Though the above options are available, the reevaluation team found that employees primarily use the ES&H concern line or "Comments, Please!" line. Reported hazards or concerns are entered into a database and all valid hazards are investigated, formally tracked on a monthly basis until completion, and reported at ES&H executive committee meetings for review and discussion. Normally, when a concern is received on the telephone, the ES&H representative from that department is electronically notified of the hazard for actions to be taken. If the concern needs urgent attention, the ES&H department staff engineer addresses the concern.

Employees interviewed indicated that they were strongly encouraged by all management levels to express and report any safety and health concerns at any time, without fear of reprisal. The reevaluation team reviewed employee reports of hazards for the past three years and found them closed without any gaps in the closures. The documents further verified that recognized hazards were adequately eliminated or controlled. Employees interviewed confirmed that they are satisfied with the hazard reporting systems and that management was very responsive in correcting hazards.

F. Accident Investigations

Honeywell FM&T has continued to make improvements in its accident investigation process since the initial DOE-VPP evaluation. A clear area of improvement is maintaining accident investigations data in a web-based database, which is available to all associates and team managers on the intranet. This improvement has increased the trending capabilities and the availability of investigation data for lessons learned purposes.

To enhance the accident investigation process, Honeywell FM&T provided training to the lead investigators in the Cause Analyses and Mistake Proofing (CA/MP) techniques, in addition to the training they received prior to the site's STAR certification. The CA/MP process involves various steps, including:

X Selecting the natural team,

X Determining root causes,

X Determining direct and contributing causes,

X Establishing corrective actions, and

X Following–up to ensure correction.

The accident investigation process applies to work-related injuries, ES&H concern/near-miss incidents, and property/vehicle damage accidents. The depth and level of detail in conducting accident investigations are risk-based. In other words, the more severe the hazard, the more rigorously the investigation is conducted.

The accident investigations at Honeywell FM&T continue to be conducted using a team approach. A natural team consisting of, at a minimum, the assigned investigator, the injured/ill associate, their team manager, and a representative from the safety or industrial hygiene department participate in the accident investigations at Honeywell FM&T. The divisions involving an accident or an incident provide the natural teams. Other persons may be added to the team by the lead investigator, as appropriate.

The reevaluation team found that all corrective actions are assigned a completion date and the divisions are responsible for implementing the corrective actions. The divisions are also responsible to assign an associate to track corrective actions through closure. Safety-related orders receive a priority ranking. Actions ranked "severe" are additionally tracked by the safety department. The ES&H executive committee continues to review the recordable injuries and the corrective actions on a monthly basis, and subsequently the minutes are published. Honeywell FM&T has an outstanding near-miss system integrated into its accident/incident investigation process and employee concerns program. The reevaluation team found several instances where Honeywell FM&T management took actions to remedy situations warranting immediate attention due to near-miss incidents.

For example, Honeywell FM&T management replaced many failing chairs on two occasions. Likewise, a safety alert note was sent to all divisions notifying of a near-miss incident involving an employee of being potentially injured from a rotating part. All associates are responsible for taking immediate corrective actions to mitigate hazardous actions or conditions, then filling out an employee concerns/near-miss notification form. The forms are readily available throughout the plant. On the form, areas are provided for describing the near miss, identifying a possible cause, and describing corrective action taken.

G. Trend Analysis

Honeywell FM&T has continued to improve its trending program by allowing the collected and analyzed data to be accessible to all plant personnel through its enhanced Intranet system. The ES&H Department on a monthly basis updates the information. Data pertaining to the occupational injuries/illnesses and first-aid cases, including subcontractor safety performance, is collected and trended.

In addition to the data availability on the Intranet, each division continues to receive a statistical breakdown describing how its associates are being injured. These data are compared across the plant, by each division, and are discussed during the monthly ES&H Executive Committee meetings, which are attended by division directors and union leaders.

In addition, the trending charts are prominently displayed in areas easily accessible to associates. The charts depict data pertaining to the types of injuries by divisions, e.g., lacerations or punctures, eye injuries, total recordable lost workday case rates, etc.

The significant reduction in first-aid cases, the implemented linkage of trending data to goal development and programmatic improvement, and the ability to focus resources on high-risk operations and departments are all positive results of Honeywell FM&T's highly effective trending system.

VI. Hazard Prevention and Control

A. Access to Certified Professionals

The safety and industrial hygiene departments at Honeywell FM&T continue to be staffed with qualified certified professionals. These professionals provide the necessary oversight and technical support for the organization to conduct its operations safely and responsibly. Additionally, the construction department has safety engineers who monitor construction activities on a daily basis. These professionals participate on accident investigation teams, conduct independent facility inspections, and provide support in the administration of the newly developed computerized Job Hazard Analysis (JHA). The medical department also plays a proactive role in minimizing employee exposures to occupational injuries and illnesses. Additional professional support to address occupational safety and health and radiation protection issues is available from local/regional consultants under contract to Honeywell FM&T.

B. Methods of Hazard Control

Honeywell FM&T's approach to eliminating or mitigating hazards embraces the required hierarchy of controls discussed below.

***Process or material substitution*—**The reevaluation team noted that new chemicals (hazardous materials) continue to be reviewed by the ES&H division prior to use in the plant. The ES&H division's established committee reviews material safety data sheets (MSDS) prior to purchase of chemicals. In this review, the committee determines whether the original material is acceptable or whether alternate material is required.

***Engineering controls*—**Honeywell FM&T continues to implement engineering controls in mitigating hazards. For example, since the initial DOE-VPP evaluation, the patrol group installed stop and strobe lights at the intersection of the hallways. The same group spearheaded a project for installation of curved mirrors at the intersection of hallways to provide the cart drivers advance warning of the traffic at the intersections. The use of engineering controls as the primary method of protecting associates was clearly evident throughout the facility. An impressive preventive maintenance program that was in place at the time of initial review for keeping the ventilation systems in good working order is being continued. This program was incorporated into the quality-assurance programs that verify acceptable airflow rates, including clear identification of multiple ranges and/or minimums.

***Administrative controls*—**In situations where engineering controls could not be implemented, the reevaluation team noted that Honeywell FM&T continues to apply administrative controls in minimizing worker exposure to workplace hazards. An example is a laceration reduction campaign by the patrol group that was initiated last year to increase employee awareness of the hazards. Throughout KCP, informational notices are posted to provide safety awareness. This was particularly true for methylene dianiline (MDA), lead, and known or suspected carcinogens. Honeywell FM&T demonstrated continued success in substituting less-hazardous chemicals in material processes to increase the level of protection provided to associates.

***Personal protective equipment (PPE)*—**The reevaluation team found interviewed associates to demonstrate a high level of knowledge about the proper uses and limitations of respiratory protective equipment. In work areas where PPE was in use, associates were observed to wear the equipment properly and all inspected PPE was in excellent condition.

Although the primary method of protecting associates at the facility is through engineering controls, PPE is routinely used in a variety of common situations. Additionally, an effective mechanism has been in place for several years that allows ES&H staff to track the purchase,

use, maintenance, and disposal of all forms of PPE.

To ensure that associates always receive the correct form of respiratory protection for the job, respirators are requested and issued in writing, with adequate oversight by the industrial hygiene department. This system, implemented by a written procedure, incorporates involvement from the industrial hygiene department, medical services department, and applicable line organization. The oversight includes a review of the materials to be used, the conditions under which work is to be performed, and the location or area. Also, a determination is made concerning whether exposure will be continuous or intermittent. Respirator use is closely tracked by the industrial hygiene and medical care departments. No respirator may be issued for a period longer than one week. Respirator wearers receive required medical surveillance through the plant medical care department.

C. Positive Reinforcement

Since the initial DOE-VPP evaluation, Honeywell FM&T has continually found ways to reward employees for their positive behaviors and continued safety awareness. The information regarding recognition and rewards programs, which was not previously available electronically, is now available on the site's Intranet system. From there an associate can link to documents that identify how recipients are selected, what rewards are given, and who is responsible for each process. Several awards are available to associates:

- Special Recognition,
- Quality Improvement,
- Associate Recognition,
- Cost Reduction (Safety Suggestions),
- Spontaneous Recognition,
- Service Star,
- VIP Parking, and
- Above & Beyond.

Honeywell FM&T continues to encourage employees to participate in all safety- and health-related matters leveraging the aforementioned awards. To improve safety awareness, Honeywell FM&T has initiated a safety slogan contest for each month. Under this program, one slogan for each month is selected out of many slogans submitted by associates, and the individual responsible for the slogan is recognized and rewarded. The selected slogan for the month is visually displayed throughout the plant for the entire month and also included in the monthly pay stubs. Another incentive program is the management encouragement for associate safe behaviors under the MOPS program.

D. Disciplinary System

The reevaluation team noted instances where Honeywell FM&T took disciplinary actions, as needed. Interviewed managers and employees were aware of the three-step process – from verbal warning to termination. The team also noted that the disciplinary system equally applies to management and the associates. During the walkthrough of the plant, the reevaluation team found employees to wear PPE and practice safe behaviors. For example, at every intersection, associates traveling on carts were observed to use caution, and use horns at the intersections. Honeywell FM&T uses a discipline method to encourage employees to work in a safe manner. All associates are informed of the system by several means, including a section in the *Employee Handbook*, collective bargaining agreements, and Management Policy Statement 25, "Environment, Safety and Health Program." The bargaining unit associates are covered by the language in their respective bargaining agreements.

E. Preventive Maintenance

The Facilities Management Service is responsible for preventive/predictive maintenance at Honeywell FM&T/Kansas City. The preventive maintenance program has improved since the initial DOE-VPP evaluation three years ago. A comprehensive computerized maintenance management system – MAXIMO – has replaced

the older maintenance management information system (MMIS). The work orders generated provide additional hazard information and controls for quick review prior to initiating work.

Any employee can input into MAXIMO if they find an item that needs maintenance. The work orders also provide instructions to maintenance personnel to consider the need for high hazard pre-job review. The engineering department consults with the safety and industrial hygiene departments on items related to safety and health. A risk priority is then assigned to each preventive maintenance order. The MAXIMO generates the preventive maintenance schedules, based on priority and 14 days in advance, and sends the schedules to 26 preventive maintenance crews. The crews consist of pipefitters, electricians, millwrights, and other trade/craft workers assigned to perform the preventive maintenance. After completing their work, the crews input the job status into the MAXIMO located in that work area. If a maintenance item is not completed within the scheduling period, it will appear on the next schedule.

Employees interviewed indicated that Honeywell FM&T's preventive maintenance program continues to be very efficient and invaluable in keeping equipment in sound working order. It was also noted that newly acquired equipment continues to be evaluated prior to operation to establish a baseline schedule for preventive maintenance.

F. Emergency Preparedness and Response

Honeywell FM&T's Emergency Management Department provides the emergency management program. The DOE-VPP reevaluation team found that Honeywell FM&T is prepared to respond to all anticipated emergencies, including terrorist activities and natural disasters like tornadoes and flood. Honeywell FM&T also has procedures in place to respond to radiological emergencies. The reevaluation team noted that the Emergency Operations Center (EOC) updates Honeywell FM&T's Emergency Plan on an annual basis.

Honeywell FM&T's Emergency Response Organization (ERO) consists primarily of the EOC, Incident Management System (IMS), and the Second Level Support Group which includes the Emergency Press Center. The Second Level Support Group performs the plume modeling, if needed.

Honeywell FM&T has a dedicated EOC, which supports the initial response to and mitigation of the emergency. In addition, the IMS is a task-organized ERO that responds to the emergencies at the event scene. Emergencies of all types are reported to the patrol headquarters. Chemical spills are reported via the SPIL hotline. Established procedures are in place to determine and activate the appropriate response to emergencies. A mobile incident command system (ICS) is set up to handle serious emergencies. The emergency response system is well organized and well equipped.

A well equipped, professionally trained fire department is onsite. Well-trained HazMat teams clean up hazardous spills. Off-shift coverage for chemical spills is provided by the fire department. Adequate training is provided to members of the fire protection department, HazMat team, and others involved in emergency preparedness. Training records are kept in a training and education database.

An environment, safety and health coordinator can be contacted at home or by mobile telephone, if the need arises. All members of the group and several production employees are trained in HazMat, first aid, and cardiopulmonary resuscitation (CPR).

All evacuation routes are clearly marked and posted throughout the plant. Emergencies are announced through a plant-wide public-address system. Plant-wide sheltering drills are conducted every other year. In addition, several mini evacuation and HazMat drills are conducted each year.

Honeywell FM&T ensures that handicapped or disabled individuals will be assisted during any emergency by pre-designating at least two or three employees to serve as escorts. The escorts

ensure that handicapped employees are assisted during an emergency or a drill.

Several outside agencies including the Kansas City Fire Department, Missouri Department of Natural Resources, and Missouri Emergency Management group fully participate in drills that are conducted every other year. This year Honeywell FM&T is participating in the DOE complex-wide Y2K emergency drill, and in the next year, Honeywell FM&T is planning to conduct a flood drill. The reevaluation team confirmed through the review of documentation and employee interviews that emergency drills continue to be critiqued and improvements implemented, where needed.

G. Medical Programs

Honeywell FM&T/Kansas City continues to provide a full-service medical facility. The reevaluation team found that the Medical Care Services Department plays a significant role in Honeywell FM&T's occupational safety and health programs. The physician and nurses visit plant areas periodically to orient themselves to job tasks and work environments and to discuss occupational concerns with associates. The medical program staff consists of one full-time physician, two nurses, a medical-records specialist, and an administrative support person.

The Medical Care Services Department offers several classes of health examinations. These include post-offer of employment physical examinations, medical surveillance examinations, job transfer examinations, and return-to-work examinations. Preventive medicine and wellness programs are also offered to enhance associates' general state of health and well being. These include immunizations, cardiovascular risk assessment for Protective Force Personnel, and worksite blood pressure screening. The Medical facility also conducts audiometric testing and evaluation of the results as well as pulmonary function tests.

The medical staff's service continues to be well-integrated with industrial hygiene programs for respiratory protection, lead, asbestos, bloodborne pathogens, hearing conservation, ergonomics, and general assessment of chemical exposure.

The medical facility is also integrated with the emergency preparedness and response program. Honeywell FM&T maintains general and advanced life-support systems for life-threatening emergencies and participates with security and offsite agencies for emergency preparedness exercises anywhere on KCP grounds.

Physicians and/or nursing staff are available for routine or emergency examinations or treatment of associates during first and second work shifts.

While no medical personnel staff the facility during the third shift, all security personnel are trained in first aid and CPR. Honeywell FM&T also maintains agreements with the local emergency medical service providers for response to the plant. Additionally, the staff physician is on-call at all times. A clear area of improvement since the initial DOE-VPP evaluation is the medical staff's increased engagement and involvement in hazard analysis and comprehensive surveys, such as those assessing ergonomics/human factors.

VII. Safety and Health Training

The training programs continue to be comprehensive and well administered. Since the initial DOE-VPP review, significant improvements have been made in the online training records system enabling employees and managers more ready and complete access to their personal training records. Employee input is now routinely asked for during the development of new courses and during the update of existing courses. The use of computer-based training (CBT) has been increased. The training department has thoughtfully limited the CBT approach to limited subject matter. An experienced instructor is always available during CBT sessions. Classic instructor/hands-on training is heavily relied on for complex subjects including lockout/tagout and respiratory protection training.

VIII. General Assessment

A. Safety and Health Conditions

The DOE-VPP reevaluation team conducted a number of walkarounds, both as a group and individually, and conducted a number of interviews with Honeywell FM&T personnel. The consensus of the reevaluation team was that the site was exceptionally well maintained and no major issues of non-compliance with DOE orders or safety and health standards were discovered.

B. Safety and Health Programs

The DOE-VPP reevaluation team found that the Honeywell FM&T/Kansas City safety and health program is a continuing, highly effective program. The overall program is comprehensive, integrated, and well communicated. The reevaluation team believes that this program has maintained STAR level recognition within the DOE-VPP.

IX. Recommendation

It is the unanimous recommendation of the DOE-VPP onsite reevaluation team that Honeywell (formerly Allied Signal) Federal Manufacturing & Technologies (FM&T)/ Kansas City be recertified into the DOE-VPP at the Star level.